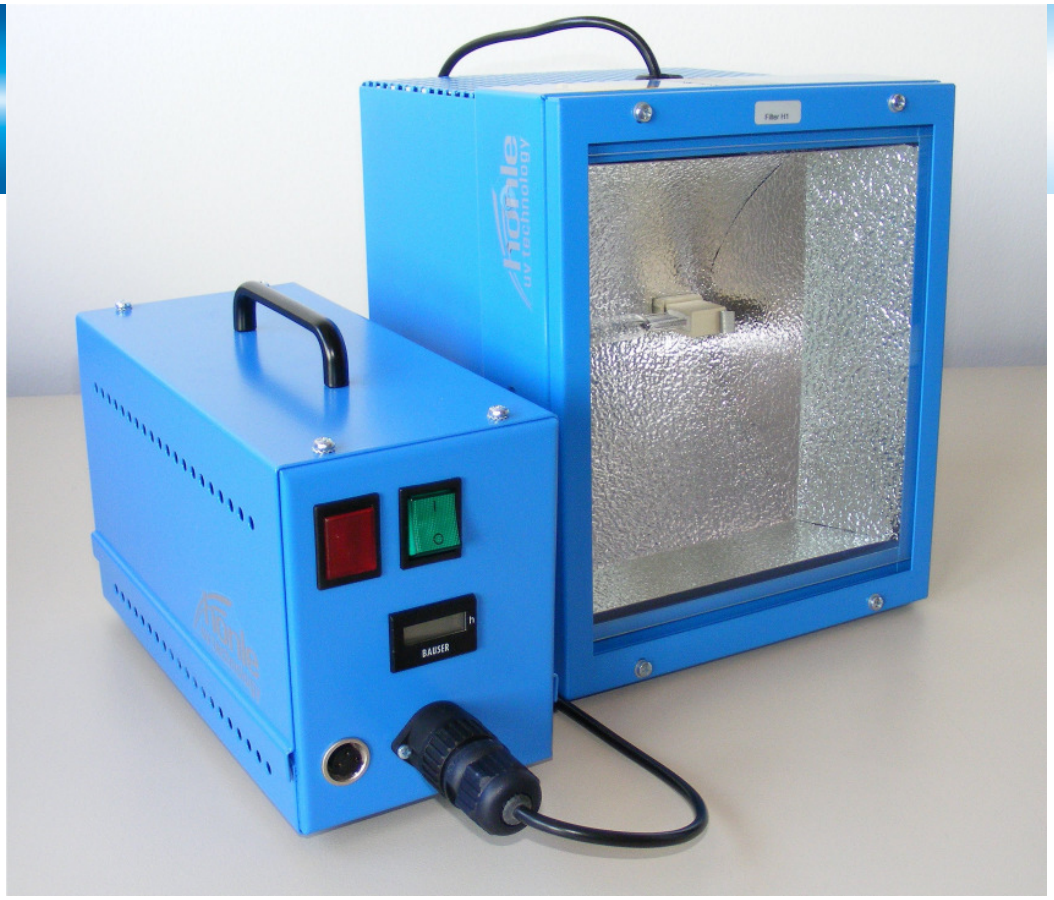

Operating Manual

UVASPOT 400/T

3979d

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82166 Gräfelfing / München

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1 Introduction

This Operating manual describes the UVASPOT 400/T, how to operate it and its areas of application.
Safety instructions and hazard warnings explain how to operate the UVASPOT 400/T safety and correctly.

The following symbols and terms are used in the manual

Danger
This symbol indicates imminent danger threatening the life and health of personnel!

Warning
This symbol indicates possible danger to the life and health of personnel.

Caution
This symbol refers to a potentially dangerous situation

Note
This symbol refers to notes, tips for application and useful information.

2 Description

The UVASPOT 400/T is a high-powered ultra-violet radiation (UV) unit.

It is equipped with a halogenide or mercury high-pressure lamp. High pressure lamps emit a particulary high radiation compared with their power consumption.

Different lamps and filter can be used to generate various spectra in the UVA, UVB or UVC range and in the black light range.

The UVASPOT 400/T consist of a lamp and a ballast unit.

The ballast supplies the electricity for the lamp.

Several UVASPOT 400T lamp units can be used together to form a radiation unit. Each lamp unit is connected to its own ballast unit.

UVASPOT 400/T with ballast unit

Areas of application

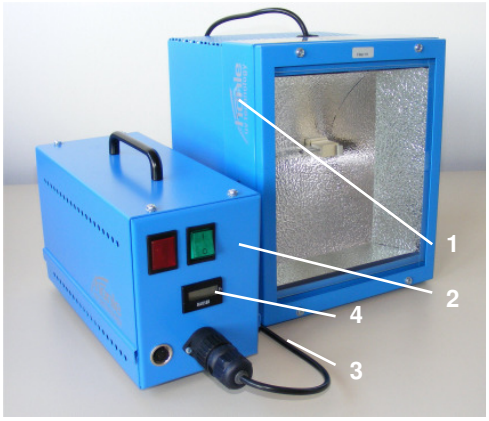
Areas of application

The UVASPOT 400/T is used in laboratories and in production processes in widely varying sectors of industry for:

- Hardening UV reactive polyester resins and casting masses (e.g. tanks, containers, pipes and plastic parts)
- Testing the UV resistance of paints, varnishes, textiles and coatings
- Fluorescence testing
- Hardening UV reactive adhesives (bonding glass, plastic, metal as well as electronic, precision mechanical and optical components)
- UV radiation in chemical, biological and pharmaceutical research and production
- Coating PC boards

Description of the individual parts and operating elements

Description of the individual parts and operating elements



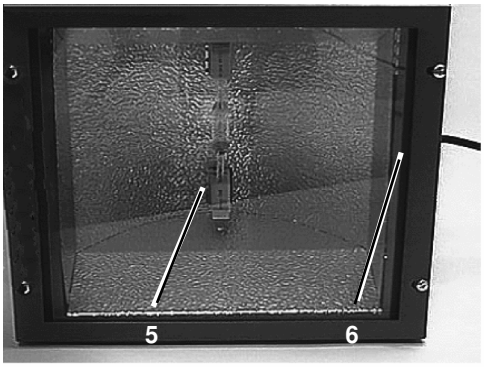
UVASPOT 400T/ with ballast unit

(1) Lamp unit

(2) Ballast unit
Supplies the lamp with electricity.

(3) Connector cable
Connects the ballast unit and the lamp unit

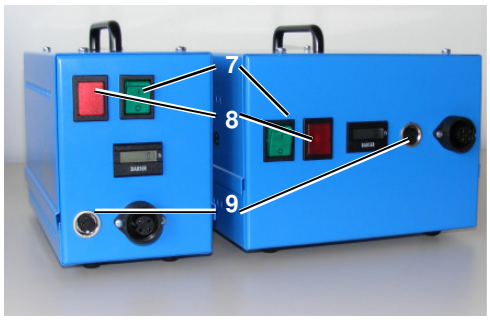
(4) Hours counter



Lamp unit front view

(5) UV lamp
UV lamp available in three types

(6) Filter unit, consisting of filter frame and filter
for adapting the spectrum to the application concerned.
The filter unit is available in four types: H1, H2, Qz, BL



Ballast unit, front view (Version EU and USA)

(7) Mains switch
Used for switching the UVASPOT 400/T on and off.

(8) Red signal lamp
Issues a warning in the event of failure of the lamp unit.

(9) Plug socket for lamp control

Ballast unit, rear view (Version EU)

(10) Inlet connector for non-heating apparatus

(11) Fuses

3 Safety instructions

General information

General infomation

A sound knowledge of all basic safety regulations is essential to ensure safe and fault-free operation of the UVASPOT 400/T.
This user's manual contains all important safety regulations to ensure safe operation of the equipment.
This user's manual, and in particular the safety instructions, must be observed by all persons working with the equipment..

In addition, all relevant rules and accident prevention regulations relating to the operation site must be observed.
At regular intervals, the operator will check that all personnel are observing the safety regulations.

Under the **Health and Safety Management at Work Regulations 1999**, users are required to carry out a suitable and sufficient assessment of the risks created by the use of the UVASPOT 400/T. They must ensure adequate control measures are in place to minimise or eliminate any of the risks created. The information contained within this manual will assist in creating your own risk assessment.

Staff obligation

Staff obligation

Before commencing work, all persons entrusted with work to be performed on the UVASPOT 400/T undertake the following.

- To observe the safety at work and accident prevention regulations.
- To read the chapter on safety and the warnings printed in this manual and to observe them at all times while using the equipment.

Danger when using the equipment

Danger when using the equipment

The UVASPOT 400/T has been manufactured in accordance with the very latest state-of-the-art technology and the recognized rules of safety technology..

The equipment may only be used under the following conditions:

- Personal Protective Equipment (PPE) is worn to protect eyes and skin.
- Materials degrade when exposed to UV light, therefore PPE´s must be inspected before use. Damaged or items showing signs of ageing must be replaced.
- It is used for the purpose for which it was constructed
- in a condition in which the equipment complies with all safety technology requirements.

Danger
Improper use the equipment can endanger the health of personnel using it or cause a risk to third parties (including the risk of serious skin damage or eye injury). It may also cause damage to the device or other material damage.

Note
Faults which impair the safety operation of the equipment must be remedied immediately.

Appropriate use

Appropriate use

The UVASPOT 400/T is an ultraviolet area lamp (UV) for the radiation of surfaces.
Large areas can be exposed by using Several devices together.
Any other use or use above and beyond these terms is defined as inappropriate and is thus dangerous.
The UVASPOT 400/T must not be used for tanning the skin. The high intensity UV would cause burning and may lead to premature skin ageing or skin cancer.
The operator may only operate the equipment as stipulated by the operating instructions in this manual.
The operator is under obligation to ensure that the prescribed inspections and servicing work are carried out and that the indicated replacement of worn parts is effected.

There are International and UK guidelines for restriction of occupational UV exposures.
Useful references:
ICNIRP Guidelines on limiting exposure (www.icnirp.de)
NRPB Advice on protection (www.nrpb.org)

The following are further conditions for appropriate use:

- The observance of all points listed in the user's manual
- The execution of all servicing and maintenance work
- Compliance with the general and specific safety instructions in this manual
- Compliance with the relevant accident prevention regulations.

Note
The Dr. Hönle AG is not liable for damage resulting from inappropriate use of the equipment.

Warranty and liability

Warranty and liability

The general sales and delivery conditions of the Dr. Hönle AG apply. The operator will have received these terms, at the latest upon signing the contract. The Dr. Hönle AG is not liable for any damage to persons or property arising from any one or more of the following:

- inappropriate use of the UVASPOT 400/T
- incorrect assembly, commissioning and operation of the UVASPOT 400/T,
- operation of the UVASPOT 400/T with faulty and/or non-functioning safety and protection devices.
- Non-observance of the instructions given in the user's manual with reference to the
- Safety, transport, storage, assembly, commissioning, operation and servicing of the devices.
- Unauthorised alterations to the construction of the UVASPOT 400/T,
- Negligent monitoring of equipment parts and subject to wear
- Repairs which are carried out incorrectly
- Catastrophes, the action of foreign bodies or acts of God..

4 Safety regulations

Organisational measures

Organisational measures

All safety devices on the equipment must be tested for correct functioning regularly, prior to carrying out work and at each shift change. Look of external signs of damage.

Informal safety measures

Informal safety measures

In addition to this user's manual, the generally and locally applicable accident prevention and environmental protection regulations must be available and observed.

Danger due to electricity

Danger due to electricity

The electrical components of the UVASPOT 400/T must be inspected regularly.

Before commencing work:

- Check all equipment components for external signs and damage
- Check that all electric cable are in perfect condition

Loose connections must be lightened and damaged wiring replaced immediately. This work must be carried out by an expert.

Danger
There is a danger caused by direct or indirect contact with electricity

Thermal hazards

The following safety precautions **must** be observed when operating the UVASPOT 400/T.

- Never touch the quartz filter during operation

Danger
There is an acute danger of fire and explosion caused by the high temperature of the quartz filter during operation (up to 200 °C)!

- Protective clothing (protective gloves, UV protection goggles) must be worn when
- working within radiation field.
- There must always be a distance of at least 1m between the equipment and flammable objects.
- If the reflector is temporarily covered with a screen, ensure that the ventilation is adequate between the screen and the filter to prevent a build-up of heat.
- **The UV lamp must not be used inside explosion-protected areas.**

Danger
Because of the high temperature of the UV lamp (1000 °C), there is an acute danger of explosion in the presence of combustible air-gas mixtures.

- Allow the equipment to cool sufficiently before opening it to replace the lamp or for any other servicing operations.

Danger
There is an acute danger of burns!
If the equipment is allowed to cool off naturally, there will be wait of at least 30 minutes before it is safe to touch it.

Danger caused by radiation

Danger caused by radiation

In addition to UVA rays, the radiation source of the UVASPOT 400/T also emits short-wave UV radiation (UVC and UVB).

For this reason, the UVASPOT 400/T must only be operated with an intact filter.

Danger
If not used properly, UV radiation can damage the skin and eyes!
It can cause severe sunburn, premature skin ageing, inflammation of the retina and conjunctiva and possible skin cancer.

The following instructions must be observed when working with the equipment.

- **Personal Protective Equipment must be worn to protect eyes and skin.**
- Protective goggles for the eyes should be to standard BS EN 170 especially Ultra-violet Filter Scale No 2-1.2 maximum spectral transmittance (313nm) 0.0003% (365nm) 0.3% model type should be for direct and peripheral exposure (side shielding).
- Gloves to protect hands should have a Clothing Protection Factor (CPF) of 30+ this is equivalent to the sun protection factor quoted for sunscreens. Marigold® Industrial have several blue nitrile glove types that score “very high” 30+ on the CPF index.
- Never look directly into the lamp when it is switched on.
- The UVASPOT 400/T must not be operated without the filter.
- The process locality must be considered to ensure other personnel are not exposed to direct or indirect ultraviolet radiation. Shielding can be created using UV absorbing plastics or metals.
- The quartz filter must be inspected regularly for signs and damage.
- The equipment must not be operated unless the quartz filter is intact.

Danger
Never look straight into the lamp. Acute risk of building!

Caution

UV radiation can cause damage to electronic components!
If EPROMs are used in the vicinity of the UVASPOT 400/T.,
They must be protected against UV radiation.

UV radiation accelerates the aging process of materials!
Surfaces and objects sensitive to UV radiation must be protected before operation.

Note
Protective articles are listed in the chapter „Order data for spare parts and accessories, spare parts and accessories.

Danger caused by gas

Danger caused by gas

Chemical fumes can be released when radiating materials with the UVASPOT 400/T.

- Observe the safety data sheets for the materials to be exposed to radiation.
- Refer to the **Control of Substances Hazardous to Health Regulations 1999 (COSHH)**
- Where necessary, breathing equipment is to be worn, and it must be ensured that the work area is adequately ventilated.
- At the start of operation, measure the level of radiation in the atmosphere. If the level is too high, a ventilation and suction unit must be installed.
- UV rays encourage the production of ozone. For this reason, it is essential to ensure that the workroom is well ventilated.

Danger
The lamp contains mercury.
If it breaks when it gets hot or during operation, mercury vapour is released.
Everyone present must leave the room immediately. The room must be thoroughly ventilated.
Subsequently, a competent person must collect the mercury residue using a suitable binding agent and dispose of appropriately.
Binding agent: Powdered copper or zinc or Protectasan
Firma Frankenbach,
D-61462 Königstein / Taunus
Tel.: ++49 (0)6174 / 3993

Servicing, maintenance, remedying faults

Servicing, maintenance, remedying faults

All necessary servicing tasks are described in the chapter „Servicing, maintenance and Cleaning". They must be carried out to ensure trouble-free operation.
In the unlikely event of faults occurring on the UVASPOT 400/T, the chapter "Faults" offers information on the causes of the fault and possible remedial action.
In the unlikely event of a fault occurring which cannot be remedied by any of the procedures listed, please contact the customer service department of the Dr. Hönle AG.
Replace any worn or damaged parts immediately.
Use only original spare parts and replacement parts.
Parts made by other manufactures may not be satisfactory from the point of view of safety technology or their suitability for this application.
No changes may be made to the UVASPOT 400/T, not fittings may be added or conversions carried out without obtaining the prior permission of the Dr. Hönle AG. In the event of claims under the warranty, for our repair and spare parts service, please contact:
.

Dr. Hönle AG
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Tel.: +49 (0)89 / 856 08-0
Fax: +49 (0)89 / 856 08-148
E-mail: uv@hoenle.com
WebSite: www.hoenle.de

Warning
No repairs or changes to the equipment other than those described in this manual may be carried out.

5 Transport, storage, delivery

The UVASPOT 400/T consists of two units which are delivered in two boxes.

Lamp unit

- Connector cable for linking the lamp with the ballast
- Filter frame with filter
- housing
- reflector with holder and UV lamp

Ballast

- The UVASPOT 400/T is connected to the electricity supply via the ballast.

The delivered goods must be inspected to ensure that the consignment is complete, that there is no damage or anything else conspicuous.

Any damage detected must be documented at once and reported immediately to your specialist dealer or directly to the Dr. Hönle AG.

Note
Packing material must be disposed of in an environment-friendly way or re-used if possible.
We would recommend that the packing material be kept to protect the equipment if it needs to be shipped onward or otherwise transported.

6 Setting-up, commissioning and operation

General information

General information

- When setting up the equipment, ensure that there are no fingerprints on the reflector, the lamp or the filter.
- Never touch the reflector
- In general, only handle the UV lamp with a clean cloth or clean gloves and as far as possible, handle only by the ceramic base.
- If it is necessary to clean the reflector, the lamp and the filter, do so when they are cold, and always use a clean cloth and alcohol.

Note
Marks on the UV lamp of the reflector (e.g. fingerprints) will be burnt on when the lamp is put into operation. They reduce the service life and the performance of the UV lamp.

Check the air inlets in the casing before switching the equipment on.
There must be no foreign bodies covering or blocking the apertures.

If the reflector is to be covered with a screen for any period of time during operation, ensure that there is a gap of between 3 and 5 cm between the screen and the filter.
This will prevent the build-up of heat, which can lead to the destruction of the filter.

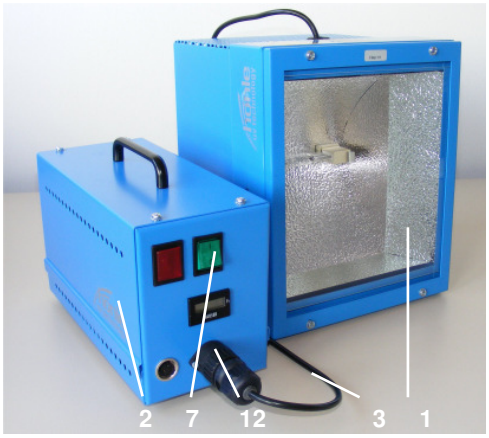
Danger
Ensure that the cooling is sufficient when setting up the UVASPOT 400/T. There is a acute danger of fire if the equipment is not sufficiently cooled!
Neither the ambient temperature nor the cooling air temperature may exceed 45° C.

- The equipment must be protected against chemical fumes.
- Only operate the UVASPOT 400/T in dry rooms.
- The equipment is only suitable for stationary use..
- The UVASPOT 400T/ is only to be operated with the axis of the lamp positioned horizontally.

Note
The lamp should not be titled horizontally by more than ± 10°, otherwise the service life of the UV lamp will be shortened.

Connecting up to the electricity supply

Connecting up to the electricity supply



UVASPOT 400/T with ballast

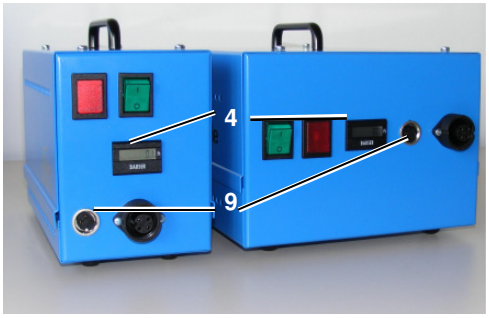
- Plug the connector cable (3) of the lamp unit (1) into the ballast unit (2) with the round socket (12).
- Plug the mains cable of the ballast unit (2) into the inlet connector for non-heating apparatus and into the mains socket.

The green lamp in the mains switch (7) lights up, when the unit is switched on.

Danger
The UVASPOT 400/T may only be connected up to properly installed and earthed sockets.

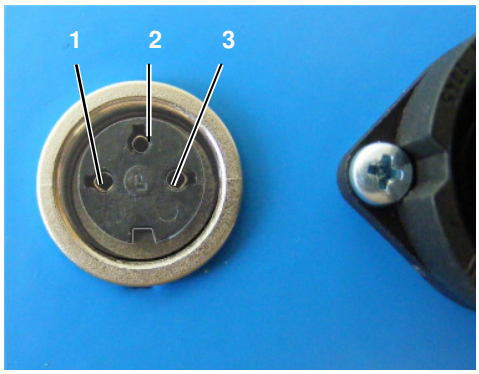
Warning
Do not connect or disconnect cable unless the ballast is switched off and de-energised.

Danger
Improper handling of UV radiation may lead to serious injury!
Always observe the safety instructions and the conditions on site.



Ballast unit, front view (Version EU and USA)

- The hour counter (4) adds up the operating hours of the ballast with a scale-reading precision of 0,1[h]. Thereby it is irrelevant if the lamp unit is connected to the ballast. Even if the unit is switched off, the display does not extinguish.



Plug socket for lamp control

- The 3-pole plug socket for lamp control (9) enables to connect a data link. In the event of fault, a relay sends a malfunction information.
- If there is a problem with the burner (or if the unit is switched off or disconnected from the mains) pin 1 is connected with pin 3. If the UVASPOT 400T is switched on and the burner has ignited, the relay opens and pin 2 is connected to pin 3.

Hinweis
If there is a problem with the burner during operation, the burner has to be checked for proper operation.
See chapter: „Faults; Fault list Part 1“.

Switching the UVASPOT 400/T on and off

UVASPOT 400/T with ballast

- Press the green mains switch (7) on the ballast unit (2) to switch the UVASPOT 400/T on and off.

Note
Observe the information provided by the manufactures in the relevant data sheets when processing materials with UV radiation

When the equipment has been switched on, the lamp in the UVASPOT 400/T ignites and the red signal lamp on the ballast unit goes out.
If the equipment cold, the ignition process can take up to approx. 30 seconds.

If the UV lamp is new, the ignition process can take up to 1 minute.

The UV lamp reaches its full power after approx. 3 minutes.

The UVASPOT 400/T is not equipped with hot ignition, which means that the lamp can only be switched on again after a cooling-off period of 3 to 5 minutes.

Note
If the red signal lamp on the ballast unit lights up during operation, the lamp must be checked. See also the chapter “Faults”; fault list Part 1.

- When work has been completed, switch the UVASPOT 400/T off at the mains switch on the ballast.

DANGER

Danger
There is an acute danger of burns!
If the equipment is allowed to cool off naturally, wait at least 10 minutes before touching it.

Note
Each time the equipment is switched on and off, its service life is reduced. Avoid switching it on and off unnecessary.

7 Servicing, maintenance and cleaning

General information

General information

- When servicing, carrying out maintenance or cleaning the equipment, ensure that no fingerprints
- In generel, only work with a clean cloth or clean gloves.
- Never touch the reflector
- Only handle the UV lamp by its ceramic bases
- If it is necessary to clean the filter, the lamp and the quartz filter, do so when they are cold, and always use a clean cloth and alcohol.

Note
Marks on the UV lamp or the reflector (e.g. fingerprints) will be burnt on when the lamp is put into operation. They reduce the service life and the performance of the UV lamp.

Servicing

Servicing

The following servicing work must be carried out on the UVASPOT 400/T.

Daily:

Inspect the reflector, the UV filter and the UV lamp for durst and other soiling.
If necessary, these parts must be cleaned, see:
“Cleaning the reflector, the UV filter and UV lamp”.

After 500 to 1000 operating hours (depending) on the operating conditions).

Replace the UV lamp, see: „Replacing the UV lamp“.

Danger
Before carrying out servicing, switch off the equipment and disconnect at the mains. Risk of serious, even fatal injury!

Servicing, maintenance and cleaning work must only be carried out when the equipment has cooled off.
If the equipment has been in operation before the servicing, maintenance or cleaning, let it cool for at least 30 minutes.
Acute danger of burns!

Replacing the UV lamp

Replacing the UV lamp

The lamp should be replaced after approx. 1000 operating hours, as the relative intensity of the UV radiation decreases the longer the lamp has been in service.

Note
A reduction in the UV intensity makes applications less effective.

Warning
Use only spare parts manufactures by the Dr. Hönle AG. Safe operation of the UVASPOT 400/T cannot be guaranteed if spare parts from other manufactures are used.

The following replacement lamps are available from the Dr. Hönle AG:

UV lamp UV 400 F/2
UV lamp UV 400 G/2
UV lamp UV 400 H/2

Note
To order spare parts, see: „Order data for spare parts and accessories; spare parts and accessories“

Required tools and parts:

The following tools and parts are needed in order to replace the UV lamp:

- Replacement lamp
- Screwdriver
- Clean fabric gloves

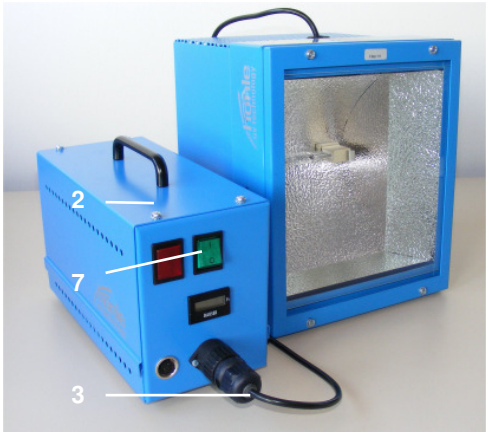
The equipment must be opened to replace the UV lamp

Danger

Before opening the equipment, switch it off and disconnect from the mains.
There is a risk of serious, even fatal injury.

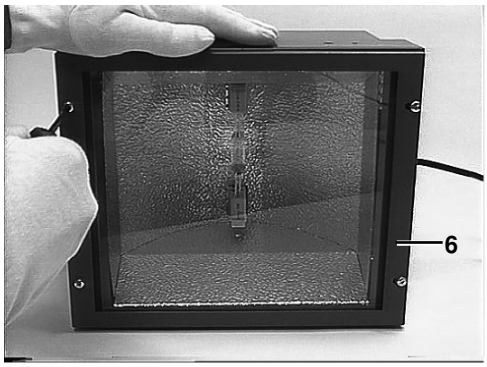
Do not open the equipment until it has cooled down. If the equipment Has been in operation immediately before replacing the lamp, let it cool for at least 30 minutes before opening.
Acute danger of burns!

Danger
The lamp contains mercury.
If it breaks when it gets hot or during operation, mercury vapour is released.
Everyone present must leave the room immediately. The room must be thoroughly ventilated.
Subsequently, a competent person must collect the mercury residue using a suitable binding agent and dispose of appropriately.
Binding agent: Powdered copper or zinc or Protectasan
Firma Frankenbach,
D-61462 Königstein / Taunus
Tel.: ++49 (0)6174 / 3993

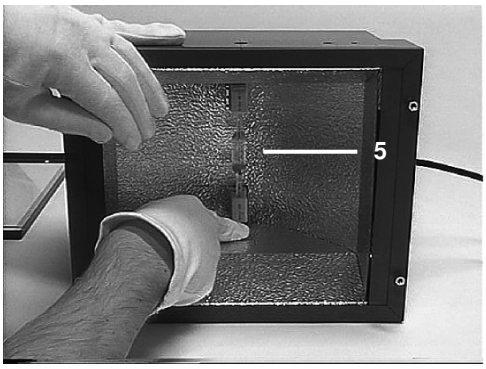


- Switch of the UVASPOT 400/T at the mains switch (7) on the ballast unit (2).
- Disconnect equipment from the mains.

  Allow equipment to cool sufficiently.
- Disconnect connector cable (3) from the ballast unit (2).

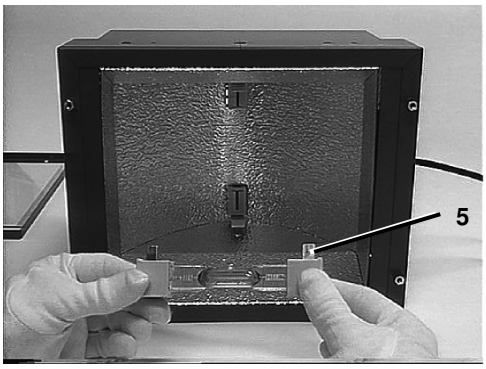


- Unsrew the four fixing screws of the filter unit (6).
- Remove the filter unit (6) from the lamp unit (1).



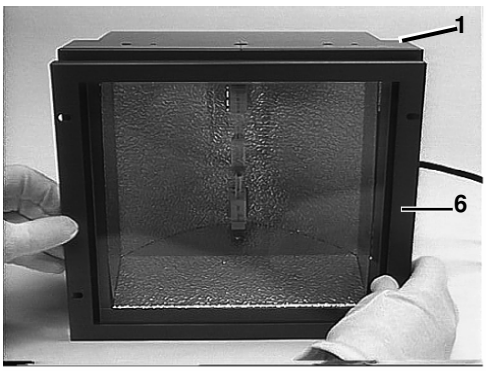
- Press the retaining springs of the lamp holder apart sideways.
- Only handle the UV lamp (5) by the ceramic bases and never touch the bulb.
- Remove the UV lamp (5) from the reflector socket.

Note
UV lamps contain mercury and must therefore be disposed of as special waste.



- Check the new UV lamp (5) for soiling.
- If necessary, clean the new lamp with a clean cloth and alcohol.
- Carefully fit the new UV lamp (5).

The UV lamp (5) must be handed by the two ceramic bases at all times and the bulb must not be touched.



- Position filter unit (6) on the housing (1).
- Ensure that it is seated correctly.
- Screw the filter unit (6) to the housing using the four fixing screws.
  Do not over-tighten the screws.

The UVASPOT 400/T is ready for connection to the mains again, see „Setting-up, Commissioning and operating; Connecting up to the electricity supply".

Maintenance

Replacing the UV filter

Danger
Never operate the equipment if the filter is damaged or without a filter.
UV radiation is a health hazard!

The UV filter is a unit comprising a filter and a filter frame.
The filter unit needs replacing if:

- The filter is damaged
- The dirty filter screen can no longer be cleaned,
- A different wave range is needed

Warning
Only replace with quartz filters manufactured by the Dr. Hönle AG.
The operational safety of the UVASPOT 400/T cannot be guaranteed if other parts are used.

The filter unit is replaced in its entirety, as The filter screen is glued to the filter frame.

The following filter units are available from the Dr. Hönle AG:

Filter unit H1
Filter unit H2
Filter unit BL
Filter unit Qz

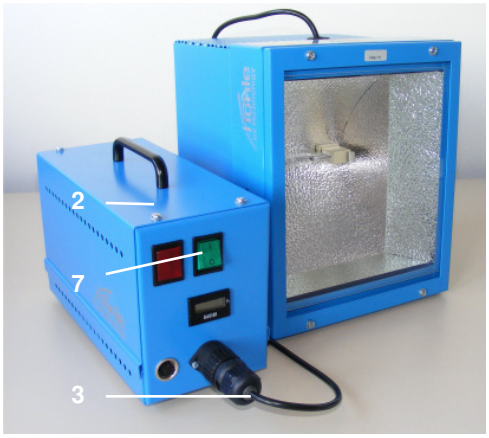
Note
To order spare parts, see: “order data for spare parts and accessories.

The equipment must be opened in order to replace the UV filter.

Danger

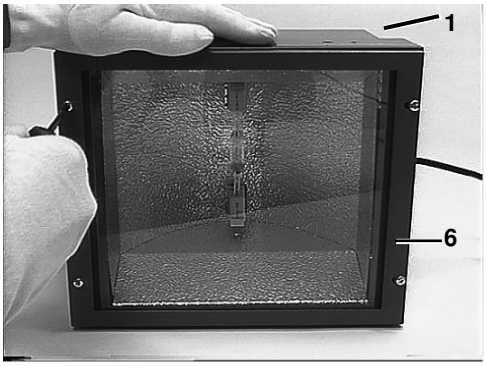
Before opening the equipment, switch it off and disconnect from the mains.
There is a risk of serious, even fatal injury.

Do not open the equipment until it has cooled down. If the equipment Has been in operation immediately before replacing the lamp, let it cool for at least 30 minutes before opening.
Acute danger of burns!

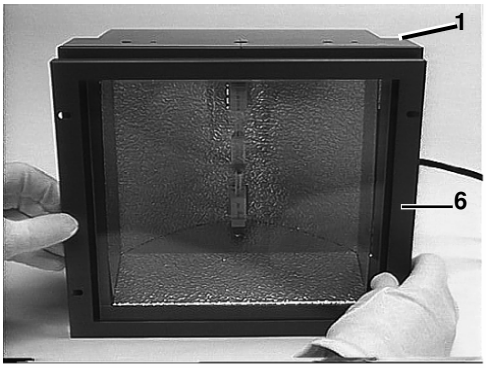


- Switch of the UVASPOT 400/T at the mains switch (7) on the ballast unit (2).
- Disconnect equipment from the mains.

  Allow equipment to cool sufficiently.
- Disconnect connector cable (3) from the ballast unit (2).



- Unscrew the four fixing screws of the filter unit (6).
- Remove the filter unit (6) from the lamp unit (1).



- Position new filter unit on the housing.
- Ensure that it is seated correctly.
- Attach the filter unit (6) to the housing with the four fixing screws.

  Do not over-tighten the screws.

The UVASPOT 400/T is ready for connection to the mains again, see “Setting-up, Commissioning and operation; Connecting up to the electricity supply.

Cleaning

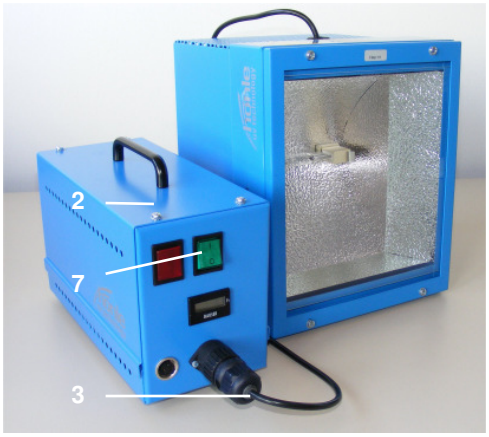
Cleaning the reflector, the UV filter and the UV lamp

If the equipment is operated in a dust-laden environment, the reflector, the UV filter and the UV lamp become soiled very quickly.
The equipment must be operated in order to clean the reflector, the UV filter or the UV lamp.

Danger

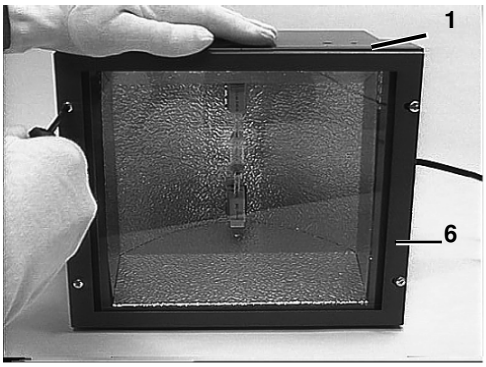
Before opening the equipment, switch it off and disconnect from the mains.
There is a risk of serious, even fatal injury.

Do not open the equipment until it has cooled down. If the equipment Has been in operation immediately before replacing the lamp, let it cool for at least 30 minutes before opening.
Acute danger of burns!



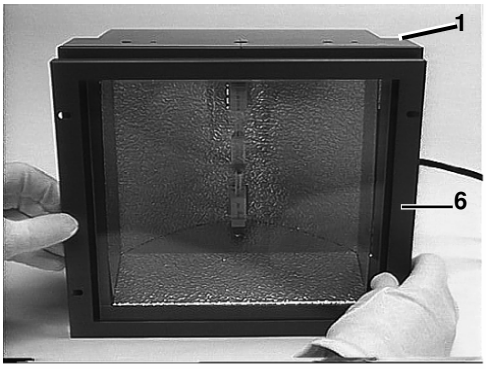
- Switch of the UVASPOT 400/T at the mains switch (7) on the ballast unit (2).
- Disconnect equipment from the mains.

  Allow equipment to cool sufficiently.
- Disconnect connector cable (3) from the ballast unit (2).



- Unsrew the four fixing screws of the filter unit (6).
- Remove the filter unit (6) from the lamp unit (1).
- Clean the reflector, the filter and the lamp, using a clean cloth and alcohol.

Note
Do not use aggressive or abrasive agents for cleaning.



- Position the cleaned filter unit on the housing.
- Ensure that it is seated correctly.
- Attach the filter unit (6) to the housing with the four fixing screws.

  Do not over-tighten the screws.

The UVASPOT 400/T is ready for connection to the mains again, see „Setting-up, commissioning and operation; Connecting up to the electricity supply”.

Cleaning the surface

Cleaning the surface of the housing and the ballast unit

Never use aggressive or abrasive agents to clean the equipment surfaces.
Use only mild cleaning agents containing tensides, cleaning cloths or damp sponge.
No moisture must be allowed to penetrate into the equipment.

8 Order date for spare parts and accessories

Ordering

Ordering

Order spare parts from our spare parts service:

Dr. Hönle AG
UV-Technologie
Lochhamer Schlag 1
D-82166 Gräfelfing / München

Tel.: +49 (0)89 / 856 08-0
Fax: +49 (0)89 / 856 08-148

Spare parts and accessories

Spare parts and accesso-ries

Description	**Article / Order No.**		
	EU	**USA (60 Hz)**	**115 V / 50 Hz**
UVASPOT 400/T with F lamp and H1 filter	16212	16286	37968
UVASPOT 400/T with F lamp and H2 filter	16213	16288	
UVASPOT 400/T with F lamp and BL filter	16215	16287	
UVASPOT 400/T with H lamp and Qz filter	16214	16289	
UVASPOT 400/T with G lamp and H1 filter	16211	16290	
Replacement lamps			
F lamp UV 400 F/2	0338		
G lamp UV 400 F/2	3008		
H lamp UV 400 H/2	1405		
Filter unit			
H1	1353	2121	2121
H2	1354	4721	
BL	2122	2122	
Qz	1739	4601	

Description	Article / Order No.		
	EU	USA (60 Hz)	115 V / 50 Hz
Ballast unit	39123	39124	37969
Fine-wire fuse	19796	19796	19796
Lamp unit Without lamp, without filter	15495	15496	15496
UV protective goggles, tinted	0067		
UV protective goggles, clear	0068		
Protective gloves	19754		
Operating manual	3979		

Warning
Use only original spare parts from the Dr. Hönle AG. The operational safety of the UVASPOT 400/T cannot be guaranteed if other parts are used.

9 Faults

General information

General information

The following faults list contain information on faults which may occur on the UVASPOT 400 T, possible causes and Tipps on how to remedy the fault.

If a fault occurs on your equipment and cannot be remedied by following these instructions, contact the customer service department of the Dr. Hönle AG
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Contact address:

Dr. Hönle AG
UV-Technologie
Lochhamer Schlag 1
D-82166 Gräfelfing / München

Tel.: +49 (0)89 / 856 08-0
Fax: +49 (0)89 / 856 08-148

Fault list Part 1

Fault list

Fault	Cause of fault	Remedial action
Green lamp on the mains switch does not light up	Device is not plugged in to the mains.	• Plug in to the mains, see: Setting-up, commissioning and operation; Connecting up to the mains.
	No current at the mains socket.	• Check the main fuse.
	Mains fuse is faulty.	• Replace fuse.
UV lamp does not ignite	The ballast and the UVASPOT 400/T are not connected.	• Connect connecting cable, see: • “Setting up, commissioning and operation; Connecting up to the mains”.
	The UVASPOT 400/T is cold. The ignation process can take up to approx. 60 seconds.	• Wait for ignation, see: „Setting up, commissioning and operation; Switching the UVASPOT 400/T on and off“.
UV lamp does not ignite, red control-lamp lights up, lamp error control is aktive.	UV lamp is not fitted correctly.	• Fit UV lamp correctly, see: „Setting up, commissionioning and operation; Replacing the UV lamp”.
	UV lamp is faulty	• Replace UV lamp, see: Setting up, commissioning and operation; Replacing the UV lamp
	UV lamp is still hot after repeated use	• Allow the prescribed 3 to 5 minutes for the equipment to cool off, see: • “Setting up, commissioning and operation; Switchning the UVASPOT 400/T on and off”.
LCD-display of hour counter doesn´t work.	Battery of the hour counter has to be renewed	• Send the unit to the customer service department of the Dr. Hönle AG

Fault list Part 2

Fault list Part 2

Fault	Cause of fault	Remedial action
Casing becomes too hot, filter bursts	Ventilator is not running	• Switch equipment off immediately. Send it to the customer dervice department.
	The air inlets and outlets of the ventilator are covered or blocked by foreign bodies.	• Remove foreign body or covering, see: „setting up, commissioning and operation; General information“.

10 Technical data

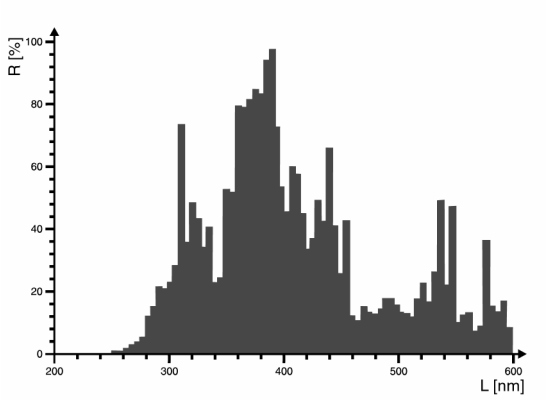
UV lamp spectra

UV lamp spectra

The UVASOT 400/T can be operated with the following lamps:

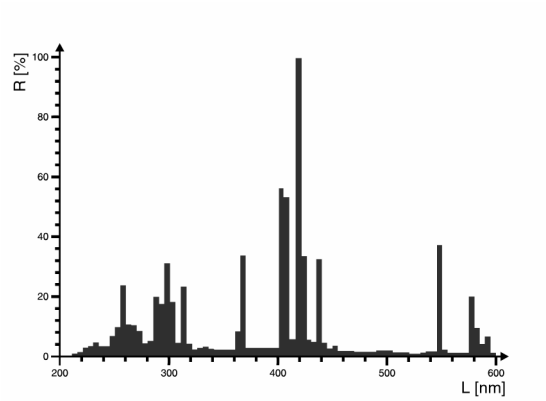
- Dr. Hönle UV lamp UV 400 F/2
- Dr. Hönle UV lamp UV 400 G/2
- Dr. Hönle UV lamp UV 400 H/2

The diagrams show the radiation spectra emitted by the UV lamps.



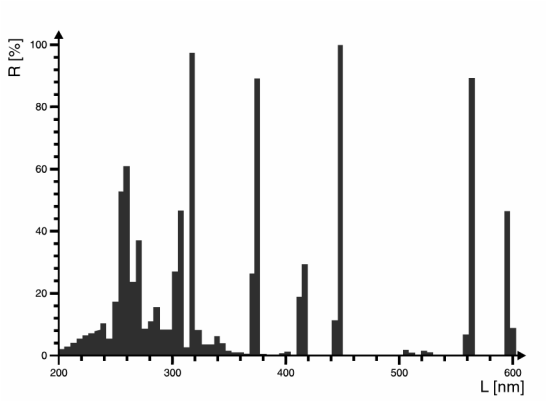
Dr. Hönle UV lamp
UV 400 F/2

R relative units
L wavelength



Dr. Hönle UV lamp
UV 400 G/2

R relative units
L Weavelength



Dr. Hönle UV lamp
UV 400 H/2

R relative units
L Wavelength

Filter data

Filter data

Filter type	Transmission range (nm)	Wavelength range
H1	from 315	UVA +VIS
H2	from 295	UVB + UVA + VIS
BL	315 - 400	UVA
Qz	from 200	UVC + UVB + UVA + VIS

Electrical data

Electrical data

Description (unit)	EU	USA (60 Hz)	115 V / 50 Hz
voltage [V/Hz]	230/50	115/60	115/50
current [A]	4,0	5,2	5,2
Power consumption [W]	~ 450	~ 450	~ 450

Dimensions and weights

Dimensions and weights (lamp unit)

Description (unit)	EU	USA (60 Hz)	115 V / 50 Hz
Length [mm]	265	265	265
Width [mm]	225	225	225
Depth [mm]	222	222	222
Weight [kg]	3,5	5,3	5,3

Dimensions and weights, ballast units

Dimensions and weights, ballast unit

Description (unit)	EU	USA (60 Hz)	115 V / 50 Hz
Length [mm]	160	160	160
Width [mm]	120	210	210
Depth [mm]	250	300	300
Weight [kg]	6	10,5	10,5